

**Completion of the 3<sup>rd</sup> Generation San Juan River Basin Hydrology Model  
San Juan River Basin Recovery Implementation Program - Hydrology Committee  
Fiscal Year 2003 Project Proposal**

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**Background:**

The 3<sup>rd</sup> Generation San Juan River Basin Hydrology Model (3<sup>rd</sup> Generation Hydrology Model) is being developed to rectify some known deficiencies in previous generation models and to model daily flows on the San Juan River mainstream to eliminate the disaggregation of monthly model flows completed previously with a model post-processor.

**Study Area:** San Juan River Basin

**Objectives:**

1. **Complete the development of the 3<sup>rd</sup> Generation Hydrology Model** - The development of the 3<sup>rd</sup> Generation Hydrology Model will be 95% complete in FY2002. Due to unforeseen data development needs and the lack of availability of staff and data, the reconfiguration of the model could not be entirely completed in FY2002 as previously anticipated (See Note 1). FY2003 technical work on the model would entail completing the following tasks: Data Systems Development (Task D); Extending Data Sets to 1929 (Task E); Extending Data Sets from 1993 to 1999 (Task F); and Daily Disaggregation (Task I) (See Note 2).

Note 1: Previous budgets assumed that New Mexico would provide irrigation depletions, both historic and baseline. Reclamation is now having to compute these depletions from acreages and cropping patterns provided by New Mexico. The information is required for the development of climate data, data transformations to appropriate formats, and computation of Blaney-Criddle depletions.

It was necessary to address and complete this work in FY2002. This came at the expense (both funding and staff time) of completing all of the work planned for FY2002. Hence the request for FY2003 funds represents funding and time expended due to addressing the unscheduled tasks in FY2002, not additional funding for previously planned work.

Note 2: The task letters correspond to the task letters identified in the FY2001 and FY2002 Hydrology Committee Proposals.

2. **Develop complete and formal documentation of the 3<sup>rd</sup> Generation Hydrology Model** - Additional funding is being requested for documentation based upon discussions with the Hydrology Committee regarding the type and level of detail for the documentation of

the model development and operating rules. The increased budget request for documentation work is a result of the Hydrology Committee's desire to have user's manuals and programmer's manuals, in addition to the previously requested formal model documentation. Although the two manuals will share certain elements, the audiences are different and therefore require additional work.

3. **Coordination and administration** - Reclamation will continue to prepare interim review documents, monthly status and budget reports, and presentations to brief the Hydrology Committee and interested parties on the development of the 3<sup>rd</sup> Generation Hydrology Model.

**Products:**

Completed 3<sup>rd</sup> Generation Hydrology Model, with documentation

**Budget FY-2003:**

Objective	Staff days	Labor <sup>1</sup>	Travel	Equipment and supplies
Objective 1				
Personnel	21	15,000		
Travel - 4 trips at \$500 per trip			2,000	
Equipment and supplies				1,100
Objective 2				
Personnel	19	12,400		
Travel				
Equipment and supplies				
Objective 3				
Personnel	36	22,000		
Travel - 4 trips at \$500 per trip			2,000	
Equipment and supplies				
Sub-total	76	49,400	4,000	1,100
Total				54,500

<sup>1</sup> Labor costs calculated based on Denver USBR costs per day (\$728), Durango USBR technical costs per day (\$580), and Durango USBR coordination costs per day (\$600). Each objective includes a combination of Denver and Durango USBR staff time.

**Estimated Outyear Funding**

The 3<sup>rd</sup> Generation Model is scheduled to be completed in June 2003.